

## **BEST PRACTICES FOR SNOW PLOWING (DEICING) WORKSHOP**

### PRESENTERS:

Ben Sinnema – Montana DOT  
Prudence Hulman – Montana DOT  
Larry Warburton – Oregon DOT

### What Equipment is used by departments and contractors?

The presenters ran through a list of what their state road maintenance sections use, including tandem and single axle trucks, snowplows, snow blowers, road graders, sanders, high-speed wings, saddle tanks for liquid deicer, etc.

Discussion turned to use of left- or right-winged plows and the success and/or problems associated with each method. William Patterson from British Columbia commented that using left and right wings together works well for them in cleaning an entire freeway stretch at one time. Wisconsin has used both right and left wings, mostly for clearing shoulders of roads. Nebraska uses motor graders with left wings. Problems encountered with damage to public vehicles and equipment were discussed.

### What specialized equipment is used in towns?

Canada – Expandable snow plow  
Calgary – Underbelly (in city) - blade measures own pressure, floats  
Winnipeg – Four-wheel drive tractor on country roads  
British Columbia – Underbody plow, sawdust hauling trucks with removable floor

Discussion of plow speed and truck size differences.

Wyoming = 35-55 mph, Nebraska = 20 mph

Alarm systems for plows were briefly discussed.

Norway uses a sanding method involving water heated to 95°C and added to sand – mixture freezes to road, resulting in improved friction for 4-5 days. They use a spinner, not hopper. If anyone is interested in this method, they were encouraged to contact him for more information.

### What chemicals used?

LaGrande, Oregon - spoke of environmental concerns with use of  $\text{MgCl}_2$ , including steel and concrete problems. They use CMA instead, considering it to be more environment-friendly.

Winnipeg – Commented that at -30°C,  $\text{MgCl}_2$  gels. They have tried pellet CMA, wanted to know where Oregon gets its liquid CMA.

Larry Warburton - Oregon uses a 25% solution, 35 gallons/lane mile. CMA costs \$1.00 more per gallon than  $\text{MgCl}_2$ . Prewetting not effective, use of sanding reduced slightly with use of chemical; depends on atmosphere and road temperature.

Bryon Breen - Does anyone have evidence of concrete damage from  $\text{MgCl}_2$ ?

Larry Warburton – Oregon saw signs of steel rusting inside concrete and corrosion problems after one application, even when products from the approved list were used. Knew of complaints of damage to aluminum rims from CMA use, but were unsure if any claims had been paid out.

Montana – No claims have been paid for damage caused by  $\text{MgCl}_2$ , and they have an active program to educate people about washing vehicles to remove chemicals.

Vancouver Island, BC – They use 23% salt brine mix - their temperatures are rarely below  $-8^\circ\text{C}$ .

Discussion of Mag flakes and red salt.

Kalispell Montana – They have used red salt (Ice Slicer) with some positive results, both in urban settings and on mountainous terrain. They apply it mixed with sand on highways and on wheel tracks in urban settings. If approved through PNS, could be very effective.

How to determine what method to use?

Prudence Hulman - Temperature of storm – rain turning to snow – do not prewet.

Larry Warburton – Temperature of pavement, sensors in pavement. Targeted pre-treat areas: bridges, critical intersections. Budgetary restrictions.

Montana – Blowing and drifting snow conditions not conducive to using chemicals.

Vancouver Island, BC – Black ice requires advance treatment in afternoon; use anti-ice trucks to spray sodium.

Question: Can you pre-treat with CMA?

Prudence Hulman – Yes.

Canada – Experience with maximum temperature spraying with  $\text{MgCl}_2$  – won't use above  $0^\circ$ .

Randy Noble, ACHD – Won't pre-treat before the first rain event washes off the roads; otherwise, will cause slick conditions.

What changes are needed to improve methods, equipment, chemicals and training?

Prudence Hulman – Need to educate the public as to what is being used, and why. Montana has had success in this regard by using the media, county and state fairs, parades, and driver's education classes. They have seen a decrease in accidents, and are getting more educated questions from the public. They also have pre- and post-season meetings with the law enforcement community, and invite them to ride-alongs in the equipment.

Larry Warburton:

Equipment

Wings

Belly-mounted plows

Chemical: Application

Deicing

Prewetting

Application rates

Equipment used

Training – What would make it better?